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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,171	08/22/2003	Dmitri Brodtkin	034497-024	9099

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Buchanan Ingersoll PC
Including attorneys from
Burns, Doane, Swecker & Mathis
P.O. Box 1404
Alexandria, VA 22313-1404

EXAMINER

BLACKWELL, GWENDOLYN A

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/646,171

Applicant(s)

BRODKIN, DMITRI

Examiner

Gwendolyn Blackwell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 19-48 is/are pending in the application.
- 4a) Of the above claim(s) 38-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 19-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/03, 6/04, 9/04, 1/05</u> | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I in the reply filed on July 20, 2006 is acknowledged. The traversal is on the ground(s) that now that the claims have been amended Group I should now include claims 1-17 and 19-30. In addition, it would not be an undue burden to examine the entire application as the International Application, from which this case serves as a basis, was searched in its entirety. From Applicant's claim amendment Groups I, II, and III will now be combined into Group I comprised of claims 1-17 and 19-37. However, the method claims of Group IV will not be rejoined at this time as it would great a serious burden to examine the entire application. MPEP § 808.02 recites that for the purposes of the initial requirement of a restriction, a serious burden on the examiner may be prima facie shown if the examiner shows by appropriate explanation either separate classification, separate status in the art, or a different field of search as defined in MPEP § 808.02. Since the Examiner has shown a different classification for the two groups of claims, a burden for examining both groups has been shown.

The requirement is still deemed proper and is therefore made FINAL.

2. If the product claims are subsequently found allowable, withdrawn process claims, which depend from or otherwise include all the limitations of the allowable product claim will be considered for rejoinder. *MPEP 821.04.*

Specification

3. The use of the trademarks has been noted in this application. They should be capitalized wherever they appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Objections

4. Claim 10 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 10 depends from itself. Correction is required. To further prosecution, claim 10 will be taken to depend from claim 1.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-17, 29, 31-33, and 36 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The refractive index of the frits is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). One of the limitations of Applicant's invention is that the refractory filler has a refractive index within +/-

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0.2 of the frits. There is no reference point for the refractive index of the frits from which to base the possible range of the refractive index of the refractory filler.

7. Claims 1, 4-17, 29, 31-33, and 36 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a refractory fillers as listed in Table 1 of the specification on page 5, does not reasonably provide enablement for any and all refractory fillers having a refractive index within ± 0.2 of the refractive index of the frits. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. Table 1 of the specification lists the refractive indices of refractory fillers of the invention. As the fillers have a certain refractive index the frits must have a particular refractive index to meet the limitations of the claim. Not all refractory fillers will meet the limitation. It is suggested to either put the refractive index range of either the frits or the refractory filler into the claim.

8. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for fused silica or quartz silica, does not reasonably provide enablement for fumed silica. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. Applicant has set forth in the specification (page 6) that fused (amorphous) silica and quartz (crystalline) silica are can be used as a refractory filler. There is no mention of fumed silica nor that fumed silica would function in a similar fashion as fused or quartz silica. Clarification is required.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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10. Claims 1-17, 29, 31-33, and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1-17, 29, 31-33, and 36 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the refractive index of the frits or the refractive index of the refractory filler. One of the limitations of Applicant's invention is that the refractory filler has a refractive index within +/- 0.2 of the frits. There is no reference point for the refractive index of the frits or vice versa from which to maintain such a refractive index relation between the frits and the refractory filler as set forth in claim 1.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1-2, 4-10, 12-17, 19-28, and 31-35 are rejected under 35 U.S.C. 102(e) as being anticipated by United States Patent no. 6,706,654, van der Zel.

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Regarding claims 1-2, 4-8, and 12-13

van der Zel discloses a pressable glass ceramic comprised of a leucite in crystalline form (glass-ceramic leucite frit), lithium silicate glass (glass frit), and other additions, such as alumina (refractory filler), (column 2, lines 41-58; column 5, lines 21-22). The thermal expansion of the glass ceramic is in the range of $15.0 \pm 0.3 \times 10^{-6}/^{\circ}\text{C}$ measured in the range of 25-500 $^{\circ}\text{C}$. Leucite is present in the glass ceramic in an amount ranging between 10-70 wt%, (column 5, lines 50-53). The glass ceramic has a pressing temperature of 700-1200 $^{\circ}\text{C}$ and a firing temperature of above 850 $^{\circ}\text{C}$, (column 6, lines 1-33).

A chemical composition and its properties are inseparable. *MPEP 2112.02*. Because the prior art exemplifies the Applicant's claimed composition in relation to the dental glass ceramic, the claimed physical properties relating to the refractive index relationship between the frits and the filler, the microstructure, layer orientation, bending strength, and glass transition temperature are present in the prior art. Absent an objective evidentiary showing to the contrary, the addition of the claimed physical property to the claim language fails to provide patentable distinction over the prior art of record, meeting the limitations of claims 1-2, 4-8, and 12-13.

Regarding claims 9-10, 14-17, 19-28, and 31-35

The leucite has a particle size of 1-3 micrometers with the glass powder has a particle size in the range 1-100 micrometers, (column 5, lines 29-63), meeting the limitations of claims 9-10, 19, 21.

Because the prior art exemplifies the Applicant's claimed composition in relation to the dental glass ceramic, the claimed physical properties relating to the refractive index relationship between the frits and the filler, the microstructure, layer orientation, bending strength and glass

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transition temperature are present in the prior art. Absent an objective evidentiary showing to the contrary, the addition of the claimed physical property to the claim language fails to provide patentable distinction over the prior art of record, meeting the limitations of claims 22-24 and 28.

Coloring agents which would include applicant's claimed pigments, opacifying agent, and fluorescing agent are present in an amount of 0-8.0 wt%, (column 5, lines 11-13), meeting the limitations of claim 14

The glass ceramic has a composition of 10-70 wt% leucite, 30-90 wt% lithium silicate glass, and 0-6.0 wt% of other additions, (column 5, lines 11-22), meeting the limitations of claims 15, 20, and 25.

The glass ceramic with all of the parameters set forth above can be used with dental restorations, such as inlays and onlays, and be fired on with a fire on porcelain, having a pressing temperature below 1000 °C and able to withstand a sintering temperature ranging between 750-1050 °C, (column 1, lines 22-26; column 6, lines 7-54), meeting the limitations of claims 16-17, 26-27, and 31-35.

13. Claims 11, 29-30, and 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent no. 6,706,654, van der Zel as applied to claims 1 and 19 above, and further in view of United States Patent no. 4,604,366, Kacicz et al.

The limitations of claims 1 and 19 are set forth above. van der Zel does not teach or disclose using a an additional glass frit or a metal core with a porcelain overlay.

Kacicz et al disclose a leucite porcelain used to make a glass ceramic wherein the glass ceramic is comprised of two leucite glass ceramics and a glass matrix comprised of a mixture of

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two glass frits. The resulting porcelain used as an overlay on a metal support with an porcelain veneer applied on top, (columns 5-6, lines 50-61).

van der Zel and Kacicz et al disclose inventions related to the use of leucite containing porcelains as pressable dental materials. It would have been obvious to one skilled in the art to modify van der Zel with the additional frit of Kacicz et al in order to control the thermal expansion of the final glass ceramic, (Kacicz, column 5, lines 50-55). It would have also been obvious to one skilled in the art to modify the ceramic core of van der Zel with the metal core of Kacicz et al in order to create other dental restorations such as bridgework, crowns, and the like, (Kacicz, column 6, lines 52-61).

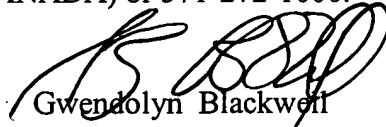
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gwendolyn Blackwell whose telephone number is (571) 272-1533. The examiner can normally be reached on Monday - Thursday; 6:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Gwendolyn Blackwell
Examiner
Art Unit 1775

gab